Project Development - Dam(ned) archaeology.

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HIGHLIGHT: For too long, the relationship between dams, engineers, heritage and archaeologists has been at a hostile impasse, says E Cunliffe, M de Gruchy and E Stammitti. Here the authors report on a new event that hoped to improve this relationship.

Dam(ned) Archaeology

The relationship between dams, engineers, heritage and archaeologists has often been contentious, if not openly hostile. Dams can inundate or destroy hundreds, if not thousands, of sites, many of which are not excavated or even recorded. Yet, as the global population rises, millions of people live without clean water or electricity, and searching for ways to feed them is an international priority. Climate change exacerbates the extreme weather conditions which lead to droughts and flooding. Dams can provide power and water for drinking and irrigation projects, and can regulate the water in areas that have too much, or provide for those with none at all. The How to Build a Dam and Save Cultural Heritage Project is run jointly between Durham and Edinburgh Universities, and is intended to provide an interdisciplinary platform for all groups involved in the issue to begin to seek a way forward.

The inaugural event - a two day workshop held at Durham University on 6-7th July 2012 - was well attended, with representatives from The British Dam Society, URS Infrastructure and Environment, the British Museum, NG Archaeology Services, and members of staff and postgraduates from the Universities of Durham, Edinburgh, Oxford, Newcastle, UCL, Ulster (N. Ireland), Kyoto (Japan), Pennsylvania (USA), Shah Abdul Latif (Pakistan). Talks covered every continent, giving a truly international perspective.

Why does it matter?

Archaeology is often considered to be a 'soft' issue, something to consider later if circumstances allow. Yet cultural heritage is intrinsically linked to well-being - the idea of entitlement to a certain quality of life. It is not enough just to live: people have the right to live well. The first European Quality of Life Survey in 2003 (Alber et al., 2004) defined it relating to individuals' life situations. The World Health Organization (1995) defined QOL as "individuals' perception of their position in life in the context of the culture and value systems in which they live and in relation to their goals, expectations, standards and concerns". One of the key indicators is the subjective measurement of overall life satisfaction, and here heritage plays a key part, as it relates to identity and ideologies (both local and national). Put simply, the past shapes how we view ourselves, what communities we feel we are a part of, and provides material evidence of those links, fostering a secure sense of identity and social pride. Studies showed that social identity and social support also affected mental and physical health outcomes, and the ability to cope (crucial in areas of displacement) (for summary see (Haslam et al., 2009), or for examples (Salgado et al., 2012, Wong et al., 2012)).

"A sense of place, purpose, and belonging tend to be good for us psychologically... far from being "just another" factor that impinges upon the health of individuals, social identities - and the notions of "us-ness" that they both embody and help create - are central to health and well-being" (Haslam et al., 2009: 2-3).

Moreover, effective preservation of cultural heritage can have key financial benefits for the communities involved. The Global Heritage Fund estimated that tourism

revenue would reach $100B by 2025 (£64B): over 50 heritage sites already have annual revenues of over $100M each (£6.4m), and the number is increasing (Global Heritage Fund, 2010). The World Tourism Organisation expects international tourism numbers to reach one billion people by 2012. They estimated that international tourism receipts surpassed $1T (£638B) last year. In many developing countries - where dams are common - tourism is a key source of income. Egypt's tourism minister estimated that 1 in 10 of the Egyptian workforce was employed in the tourism sector. In 2008, 12.8 million tourists visited Egypt, generating $11B (£7B) in income (Dziadosz, 2009). In many smaller developing countries, tourism revenue accounts for almost a tenth of the GDP; in the Seychelles it was more than a third (NationMaster, 2005).

Handled properly, tourism is big business, but it is often located along river banks - the loci of human occupation throughout history. River plains have the most fertile soil, provide easy transport, sanitation, and drinking water, and the most beautiful views - exactly the places tourists want to visit. Proportionally, building a dam threatens more cultural heritage than development in any other area, and cuts off a vital source of revenue. Although it is sometimes possible to move sites, as in the case of the famous Aswan Dam temples, this is expensive, and is not always an option.

Key Issues: working together sooner makes things better for everyone

Often archaeology is only involved after a dam has been planned, designed, a contractor hired, and construction is ready to begin. This has two major results:

1. While there remains a limited understanding of the effects of inundation on different types of sites, it is already clear that in some cases small changes to dam design can make an enormous difference in the preservation of at least some kinds of sites. Unfortunately, by waiting so long to involve cultural heritage specialists, what could have been a negligible change in the design phase (for example, raising a dam a few feet to ensure a site is located in the anaerobic zone of the reservoir or shifting a spillway slightly to avoid a major site) becomes a prohibitively expensive endeavour and sites are lost.

2. Archaeologists are given the impossible task of recording hundreds or even thousands of sites in very short time scales - for many organisations, excavation seasons are only a few months long. It can take decades to excavate a large site to a standard which will fully document it, yet in salvage archaeology teams are rarely given more than a few years to cover entire areas. In one apocryphal story, they were given 48 hours. To give an example, let us assume 500 sites in an impact area, and assuming 3 month excavation seasons and a 5 year salvage period. This means, archaeologists must discover, identify, measure, date, map, photograph, illustrate, and generally describe according to legal standards more than one site a day - not factoring taking time out to eat or sleep! Of course even the most passionate, hard-working archaeologist needs to eat and sleep. Out of necessity sites are prioritized and those lower down the chain are sacrificed.

Prioritizing the recording of sites may seem like an effective solution, but in reality it is the worst solution short of ignoring cultural heritage all together.

Key Issues: colonialist archaeology

Archaeologists view themselves as the caretakers of history, protecting it and studying it, often by recording it, and removing it to wherever they came from. However, this often disregards the modern populations who live on or by those sites, who interact with them on a regular basis, and who, it can be argued, have as much right to them as the archaeologists. They may not be the biological descendants of the original site creators, but it has become their land, and they have inherited the history. Which sites they value the most may be different from the sites a foreign population values. The result is the feeling that their heritage does not matter and is not cared for.

Moreover, it can be demonstrated that archaeologists and those funding their work can have a preference towards older civilisations and are sometimes biased against more modern remains. Take, for example, the prioritization of ancient Egyptian tombs and temples or the remains of major Mesopotamian sites versus 'modern' Islamic remains (which are still almost 1500 - 1000 years old!) This directly conflicts with local values where predominantly Muslim countries often teach Arabic history starting with the spread of Islam, leaving the general population entirely unaware of the earlier civilisations.

In addition, people will also have their own traditions and their own relationship to the sites, (because heritage does play a key role in current identities and ideologies) which archaeologists are often ill-equipped to record. However, few rescue projects consider the appointment of an anthropologist, or are allowed the time it would take. The problem is this:

Cultural Heritage = Tangible Heritage + Intangible Heritage

Archaeologists are often only formally trained in recording and analysis of tangible heritage, which is what people more commonly think of as archaeology.

"Cultural Heritage is an expression of the ways of living developed by a community and passed on from generation to generation, including customs, practices, places, objects, artistic expressions and values... As part of human activity Cultural Heritage produces tangible representations of the value systems, beliefs, traditions and lifestyles." (Culture in Development)

The past is about people - they made it, they used it, and they reused what had gone before. It is no longer enough to talk about archaeology as an objective term, separated from the present. UNESCO recognised the importance of these values with the inclusion of Cultural Landscapes onto the World Heritage Lists, signifying universal importance for all mankind:

"Cultural landscapes - cultivated terraces on lofty mountains, gardens, sacred places... - testify to the creative genius, social development and the imaginative and spiritual vitality of humanity. They are part of our collective identity."(UNESCO, 2012)

Perhaps the most famous example is the dreamscapes of the Australian aboriginal people, but there are countless others. To date, 86 cultural landscapes have been included on the World Heritage list: they are as important as built landscapes.

Key Issues: the discovery fallacy

It is an often stated fallacy that dams have aided discovery and enhanced knowledge by enabling rescue work in areas that were otherwise overlooked. Very little was known about the archaeology along the Upper Nile (the historic Kingdom of Kush), for example, until a series of dams were built, encouraging archaeologists to examine the area. What they found forced a re-evaluation of the importance of the area, securing its place in the histories of African kingdoms. It is probably true to say that without the dams it would have been many years before this archaeology came to light, but that simple statement contradicts a founding principle of archaeology - that you must not dig unless what you find can be adequately recorded. Excavation is destructive - often all that remains is the records. The area would eventually have been examined when time and money permitted a full study of the area and responsible excavations could be conducted. Important discoveries made during salvage excavations should not be used as justification, at the expense of ignoring the numerous sites which were destroyed.

Final remarks

How to Build a Dam and Save Cultural Heritage has only just begun: we have no definitive answers at this stage. Instead we offer some final remarks and suggestions that could begin to bring engineers and archaeologists together again.

1. Specialist terminology - not only is there unique terminology within groups, but there are terms which can have different (not necessarily neutral) meanings between groups. For example, the term "soft issue" is a classification term in engineering, but to others it has derogatory connotations. In order to achieve effective communication, it is important to define terms rather than assume the audience will understand their meaning in the way intended.

2. Data - as emphasized at the workshop, it is not good enough to say why something is desired, data is required. It is an area that archaeologists fall behind in, whether monitoring the social outcomes and financial benefits of heritage, or even when studying inundation damage to sites. Emily Stammitti, a director of the project, is expected to complete her Ph.D. studying exactly this last problem by the end of the year. Lenihan (Lenihan et al., 1981) studied inundation in American reservoirs in the 1970s, and Stammitti's work represents the first attempt to expand that study to other site types in other countries. Just like every dam is unique, so is every archaeological site, but it may be possible to create a typology based on the construction materials of sites that can be used as a basis for finding solutions.

3. Many engineering companies requisition satellite images and aerial photographs of the potential dam and reservoir area, and create 3D models of the terrain. These images are extremely valuable to archaeologists in assessing the archaeological potential of an area. LiDAR, for example, can be used to detect archaeological earthworks of 100mm in height and even purely visual analyses are extremely worthwhile. When the area is relatively unknown, some salvage projects are based on little more than educated guesswork in choosing what and how much of each site to excavated and record. If archaeologists were actively involved in the planning

process, with access to more information from an earlier stage, they would be able to provide much more accurate estimations of the time needed, and potential costs, increasing the effectiveness of limited resources by focusing time and money on select areas. In the long run, it will also help increase data regarding the effects of dam construction on cultural heritage sites.

4. Dialogue, and greater involvement between all parties, is a necessity. Governments, international agencies and funders all have a role to play in setting standards of best practice and encouraging codes of conduct that meet those standards. The ultimate aim of this project is the production of guidelines for cultural heritage management in dam construction aimed at developers, contractors and policy-makers. As we begin to collect the data to achieve this goal and build the foundations for an interdisciplinary network, we welcome feedback, suggestions and further ideas.

The future of cultural heritage in dam development zones depends on the continued actions and dialogues not just of those at the workshop, but of the whole community involved in dam construction, and those who inhabit the areas under threat. Yet all of this comes back to money and to time, and these in turn depend on understanding. As cultural heritage experts, we are only just coming to appreciate the scale and complexity of the problem, both for ourselves, and for those we work with, and in this we ask your support. Together we must raise awareness of the importance of heritage and its relationship to the present before it is too late, and the past is washed away forever.

To join the dialogue, please join the discussion boards:
https://sites.google.com/site/saveculturalheritage/discussion-forum

Or follow on Twitter: @DamsandHeritage#bdsh

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